

REMARKS

A typographical error in the specification has been corrected. Claims 25, 27, and 29 - 40 have been amended. Claims 26 and 28 have been cancelled. Claims 41 - 45 have been added. No new matter has been introduced with this correction or these amendments or added claims, all of which are supported in the specification as originally submitted. Claims 25, 27, and 29 - 45 are now in the application.

In their response dated September 4, 2003, Applicants used the term "database" in their claims. This term normally connotes a database management system having (for example) a relational database with rows and tables, and commands expressed in a notation such as SQL notation. This is the environment to which Gorelik's invention is directed. Applicants' invention, on the other hand, is not limited to a database environment. In fact, as Applicants stated in their response submitted in March, 2003 (responsive to the first Office Action), while Gorelik teaches creating two separate copies of a database, Applicants' invention does not create duplicate copies of the underlying data, but rather creates two copies of an index (which is more properly referred to as a data structure, instead of a database) to the underlying data. Reference was made to p. 18, lines 6 - 10 of Applicants' specification as originally filed, where this is stated. Accordingly, Applicants have amended all remaining ones of the previously-submitted claims herein to replace "database" with either "data structure" or "index", and apologize for any inconvenience caused by introducing the term in the previous response.

I. Rejection Under 35 U.S.C. §112, second paragraph

Paragraph 2 of the Office Action dated October 6, 2003 (hereinafter, "the Office Action") states that Claims 25 - 28 have been rejected under 35 U.S.C. §112, second paragraph, as having insufficient antecedent basis for the terms "the updated database", "the non-updated database", and "the prior update". Paragraph 4 of the Office Action states that Claims 25 - 28 use terms "database1" and "database2", which are not referenced in the specification. Appropriate correction has been made herein, and the Examiner is respectfully requested to withdraw this rejection.

II. Rejection Under 35 U.S.C. §102(e)

Paragraph 7 of the Office Action states that Claims 25 - 28 have been rejected under 35 U.S.C. §102(3) as being anticipated by Gorelik et al. (U. S. Patent Publication US2002/0004799). Claims 26 and 28 have been cancelled from the application. This rejection is respectfully traversed with reference to Claims 25 and 27 as amended herein.

Applicants have amended their independent Claims 25 and 27 to explicitly specify that the two indexes each index "the" data store to be searched and updated. This is distinct from Gorelik, which teaches using two copies of a single database. (See lines 4 - 7 of the Gorelik's Abstract; lines 2 - 3 of paragraph 8; lines 5 - 7 of paragraph 22; lines 3 - 4 of paragraph 30; and lines 6 - 7 of paragraph 39, where this use of two databases is discussed.) As will be obvious, using two indexes (as in Applicants' invention) to a single copy of the data, rather than duplicating the underlying data (as in Gorelik's technique), provides significant advantages in

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terms of reduced storage space, etc. (Applicants have also amended previously-submitted independent Claims 29, 33, and 37 to clearly specify that there is "a single copy" of the underlying data, while using two separate "data structures".)

Applicants have amended Claims 25 and 27 (as well as previously-submitted independent Claims 29, 33, and 37) to specify that the switching of indexes (or data structures, as appropriate to the particular claim) occurs "responsive to" the updating of the second of these indexes (or data structures). Page 4, paragraph 2 of the Office Action dated June 5, 2003 admits that Gorelik does not explicitly disclose switching after each update, but states that this would have been obvious because if not, the query "will search the old incorrect content". This is using hindsight reconstruction against Applicants' claims, which is not permitted. Gorelik describes how he contemplated avoiding use of incorrect content, including requiring a user to manually intervene to perform a database switch (where, presumably, the user knows when this operation can be safely performed).

In fact, Gorelik explicitly specifies his contemplated approaches to switching his databases, and it is not after each update. Refer to paragraphs 36 and 37 of Gorelik, where his three approaches to switching are described. As Applicants have previously explained, these paragraphs of Gorelik teach that the switching may be triggered by (1) manual intervention of a user, (2) completion of "all of the relevant data flows" of a job, or (3) a switch that is scheduled "at the optimal times".

Clearly, switching two databases by Gorelik's first approach of manual intervention is different from Applicants' claimed technique of switching two indexes to one data store, after every update to one of the indexes. In addition, Applicants' claim language specifically states that this switch occurs "responsive to" the update. A manual switch, as in Gorelik, occurs "responsive to" a user performing some switch command or action, and rather than being "responsive to" the update (as in Applicants' claim language), this user-controlled command/action follows the actual update by some undetermined time delay.

A "scheduled" switching, as disclosed in Gorelik's second approach, means a switching that occurs at some predetermined time during the day. See paragraph 37, which states "With scheduled switching, jobs are scheduled to run at specific times, and the switch is scheduled for a time when jobs are not scheduled." (emphasis added). Because Gorelik teaches that the switching is scheduled for "specific times ... when jobs are not scheduled", it is clear that this is distinct from Applicants' claimed approach of performing the switching "responsive to" each update. That is, Gorelik's scheduled switching occurs when there are no more jobs executing searches, or executing anything else. Applicants' technique, on the other hand, clearly intermingles the switching with other execution, because the claim language specifies that Applicants' switching occurs "responsive to ... performing" an update. Furthermore, Gorelik's scheduled switching occurs "responsive to" reaching the predetermined time of day, not to performing an update (as in Applicants' claims).

Gorelik's third disclosed approach for switching the databases is the "application initiated

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switching”. This is referred to in paragraph 36 as “to add a trigger at the end of a job to switch at the completion of all of the relevant data flows” (emphasis added). In this case, Gorelik’s switching occurs “responsive to” reaching the end-of-job trigger, which may be completely unrelated to performing updates (and which is therefore distinct from being “responsive to” an update, as in Applicants’ claim language).

See also Gorelik's Appendix A, which is described (in paragraphs 20 and 31) as a sample file used to buffer updates using SQL commands. Importantly, Applicants note that this sample file contains a number of "transactions" (see notation "#acta_start_transaction#", which occurs repeatedly), where one of these transactions includes records for 10 different employees and another of these transactions includes records for 3 different employees (where each employee record is of the form "If exists ... update ... else insert into ..."). This example clearly indicates that Gorelik did not teach performing an update and then switching the databases responsive to that update.

Accordingly, it can be seen Gorelik's database switching is distinct from the limitations in Applicants' independent claims. Applicants therefore respectfully request withdrawal of the §102 rejection of Claims 25 and 27.

III. Rejection under 35 U.S.C. §103(a)

Paragraph 9 of the Office Action states that Claims 29 - 40 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gorelik et al. in view of "Serialization of AVL-Binary

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Tree Element Retrieval via Duplexed Pointers" (March 1992, IBM Technical Disclosure Bulletin, hereinafter "the TDB article"). This rejection is respectfully traversed with reference to the claims as amended herein.

Applicants have described above that their independent Claims 29, 33, and 37 have been amended herein to specify that the two data structures pertain to a single copy of stored data. This is distinct from Gorelik's duplicated databases. Applicants have also described in detail (above, with reference to the §102 rejection) that Gorelik does not teach switching that occurs "responsive to" performing an update.

Applicants have previously described the TDB article on p. 5, line 13 - p. 6, line 15 of their specification as originally filed. Neither of these references teaches use of a "search use count", as specified in Applicants' independent Claims 29, 33, and 37, that is incremented for each search and then decremented after the search. Furthermore, neither of these references teaches activating an application of an update when this search use count "has a value indicating that no searches are being performed ...", as in the final element of Applicants' Claims 29, 33, and 37.

Note that these independent claims have been amended herein to use the terminology "applying the first update" rather than the previously-submitted terminology "performing a second update", when referring to the after-switching update of the now-switched second data structure. The current claim language more clearly indicates that it is the same update that was performed

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“against a second of the two data structures” that is then being applied, after the switching, to also update the now-switched second data structure.

Accordingly, Applicants respectfully submit that these references do not render their Claims 29, 33, and 37 unpatentable. By virtue of the patentability of these independent claims, dependent Claims 30 - 32, 34 - 36, and 38 - 40 are also deemed patentable. Applicants therefore respectfully request the Examiner to withdraw the §103 rejection.

IV. Added Claims

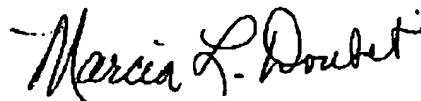
Claims 41 - 45 have been added. The language of these claims is taken from now-cancelled Claims 11, 15 - 16, and 23 - 24 in the unentered amendment dated August, 2003. In the subsequently-received Advisory Action dated August 18, 2003, the Examiner indicated that further consideration and search was required regarding several proposed claim limitations in Claims 11 and 16 (which are independent claims; Claims 15 and 23 - 24 are dependent claims). Applicants respectfully request that these claims be evaluated, and submit that the limitations claimed therein are clearly patentable over the references that have been cited heretofore. (Applicants also note that occurrences of “the data using”, which were introduced to Claim 11 in the unentered amendment, have been removed from these new claims herein, and the term “data being indexed” has been replaced in Claim 41 by “the stored data”).

V. Conclusion

Applicants respectfully request reconsideration of the pending rejected claims, withdrawal

of all presently outstanding rejections, and allowance of all remaining claims at an early date.

Respectfully submitted,



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